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Considerations in bringing a cancer biomarker to clinical application.

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Specific challenges face our application of emerging biomarkers to early lung cancer detection. These challenges might be considered frontiers to be bridged between established biomedical disciplines, requiring expertise often beyond the range of individual investigators. Cross-disciplinary research already has led to new appreciation of the mechanisms which underlie the phenotypic expression of the transformed cell and places within our grasp the tools which might lead to successful early lung cancer detection. Prior to the successful application of newly described markers, further cross-disciplinary research must (a) refine the selection of biologically appropriate markers, (b) validate such markers against acknowledged disease end points, (c) establish quantitative criteria for marker presence/absence, and (d) confirm marker predictive value in prospective population trials.

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